Agilent E4980A Precision LCR Meter, 20 Hz to 2 MHz

Configuration Guide

Agilent Technologies

Ordering Guide

The following steps will guide you through configuring your E4980A.

Standard Furnished Item	
Description	**Additional Information**
CD-ROM	Contains User's Guide (in PDF) and Sample Program. See documentation option for printed manuals.
CD-ROM	Contains Agilent IO Libraries Suite (the latest versions).
USB Cable	USB (Type A) to USB (Type Mini-B) cable
Power Cable	
Certificate of Calibration	

Note: Test Fixture and printed copy of User's Guide are not furnished. See Documentation Option and Available Accessories for the selection of these items.

Step 1. Choose Hardware Option (Mandatory)

Description	Option No.	Requires	Not Compatible	Additional Information
Bias Current Interface	E4980A-002	None	001 (See Notes 1 and 2)	Adds a digital interface to allow the E4980A to control the 42841A Bias Current Source. See Available Accessory for the bias current source and bias current test fixtures.
Handler Interface	E4980A-201	None	None (See Note 2)	Adds handler interface
Scanner Interface	E4980A-301	None	None (See Note 2)	Adds scanner interface
No Interface	E4980A-710	None	None (See Note 2)	Attaches blank panel to the expansion slots

Note 1: The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.
Note 2: Up to 2 interfaces can be installed in the expansion slots on the rear panel. When no interface is added, two of the E4980A-710 are installed. When one interface is added, that interface and the E4980A-710 are installed.
Note 3: Refer to Hardware Upgrade for retrofit information on the above options.

Step 2. Choose Software Option (If not required, go to Step 3)

Description	Option No.	Requires	Not Compatible	Additional Information
Power and DC Bias Enhancement	E4980A-001	None	002 (See Note 1)	Increases test signal level range to 20 V/100 mA rms max. Adds internal DC bias function controllable from 0 ± 40 V/± 100 mA dc, 2nd DC source, and Rdc/Vdc/Idc measurement functions.
Entry Model	E4980A-005	None	None	Low-priced version. Same as basic model except for difference in measurement time (slow speed).

Note 1: The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.
Note 2: Refer to Software Upgrade for retrofit information on the above options.

Step 3. Choose General/Miscellaneous Accessory Option (If not required, go to Step 4)

Description	Option No.	Requires	Not Compatible	Additional Information
Rackmount Kit	E4980A-1CM	None	None	

Note: Front Handle Kit and Handle/Rack Mount Kit are not available.

Step 4. Choose Documentation Option (If not required, go to Step 5)

Description	Option No.	Additional Information
U.S. - English Localization	E4980A-ABA	Printed manuals are not furnished. Order documentation option if required.
Japan - Japanese Localization	E4980A-ABJ	

Step 5. Choose Calibration Certificate Option (If not required, go to Step 6)

Description	Option No.	Additional Information
ISO 17025 Compliant Calibration	E4980A-1A7	ISO 17025 compliant calibration
ANSI Z540 Compliant Calibration	E4980A-A6J	ANSI Z540 compliant calibration

Step 6. Choose Warranty Plan

1-year Return-to-Agilent warranty and service plan are standard. For extended warranty options and additional information, contact your local Agilent sales office or visit the Agilent home website.

Hardware Upgrade

Option No.	Description	Upgrade Model No. or Equivalent Part Number	Customer Installable	Requires (Instrument must already include the following)	Not Compatible	Additional Information
E4980A-002	Bias Current Interface	E4980AU-002	No	None	001 (See Note 1)	Installable at service center only
E4980A-201	Handler Interface	E4980AU-201	No	None	None	
E4980A-301	Scanner Interface	E4980AU-301	No	None	None	
E4980A-1CM	Rackmount Kit	5063-9241	Yes	None	None	

Note 1: The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.

Note 2: For details of the upgrade information, refer to product homepage on the Agilent home website.

Software Upgrade

Option No.	Description	Upgrade Model No. or Equivalent Part Number	Customer Installable	Requires (Instrument must already include the following)	Not Compatible	Additional Information
E4980A-001	Power and DC Bias Enhancement	E4980AU-001	No	None	002 (See Note 1)	Installable at service center only
E4980A-007	Standard Model	E4980AU-007	No	E4980A-005	None	Installable at service center only

Note 1: The E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.

Note 2: For firmware update and upgrade information, refer to product homepage on the Agilent home website.

Available Accessories – for DC Current Bias up to 20 A

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Bias Current Source	42841A	E4980A-002 (See Notes 1 and 2)	Bias current source; 0.01 A to 20 A
	42841A-907	E4980A-002	Front Handle Kit. Not installable simultaneously with 42841A-909
	42841A-908	E4980A-002	Rack Mount Kit. Not installable simultaneously with 42841A-909
	42841A-909	E4980A-002	Rack Mount and Front Handle Kit. Not installable simultaneously with 42841A-907 or 42841A-908.
	42841A-ABA	E4980A-002	U.S. - English localization
	42841A-ABJ	E4980A-002	Japan – Japanese localization
	42841A-UK6	E4980A-002	Commercial calibration certificate with test data
Bias Current Test Fixture	42842A	E4980A-002	Test fixture for use with the 42841A; 20 A max.
	42842A-ABA	E4980A-002	U.S. - English localization
	42842A-ABJ	E4980A-002	Japan – Japanese localization
Test Leads	16048A	None	BNC connector leads; 0.94 m. BNC connector bracket and Operation and Service Manual are furnished.

Note 1: E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.
Note 2: For details of DC current bias measurement configuration, refer to *Application Note 369-8, Wide Range DC Current Biased Inductance Measurement* (Publication Number: 5950-2367).

Available Accessories – for DC Current Bias up to 40 A

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Bias Current Source	42841A (2 units required)	E4980A-002 (See Notes 1 and 3)	Bias current source; 0.01 A to 20 A. 2 units are required for configuring a 40 A system.
	42841A-907	E4980A-002	Front Handle Kit. Not installable simultaneously with 42841A-909
	42841A-908	E4980A-002	Rack Mount Kit. Not installable simultaneously with 42841A-909
	42841A-909	E4980A-002	Rack Mount and Front Handle Kit. Not installable simultaneously with 42841A-907 or 42841A-908
	42841A-ABA	E4980A-002	U.S. - English localization
	42841A-ABJ	E4980A-002	Japan – Japanese localization
	42841A-UK6	E4980A-002	Commercial calibration certificate with test data
Bias Current Test Fixture	42842B	E4980A-002	Test fixture for use with the 42841A; 40 A max.
	42842B-ABA	E4980A-002	U.S. - English localization (See Note 2)
	42842B-ABJ	E4980A-002	Japan – Japanese localization (See Note 2)
Bias Current Cable	42843A	E4980A-002	Required for connecting two 42841A units in parallel
	42843A-ABA	E4980A-002	U.S. - English localization (See Note 2)
	42843A-ABJ	E4980A-002	Japan – Japanese localization (See Note 2)
Test Leads	16048A	None	BNC connector leads; 0.94 m. BNC connector bracket and Operation and Service Manual are furnished.

Note 1: E4980A-001 and E4980A-002 can be installed in the same unit but cannot be operated simultaneously.
Note 2: Operation and Service Manual is common to the 42842A/B and the 42843A. Order the manual for either the 42842B or 42843A, not for both of them.
Note 3: For details of DC current bias measurement configuration, refer to *Application Note 369-8, Wide Range DC Current Biased Inductance Measurement* (Publication Number: 5950-2367)

Available Accessories – General Measurement Accessories

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
SMD Test Fixture	16034E	None	For SMD; (0.1 to 8)L x (0.5 to 10)W x (0.5 to 10)H mm. Operation and Service Manual is furnished.
SMD Test Fixture	16034G	None	For SMD; (0.1 to 5)L x (0.3 to 1.6)W x (0.3 to 1.6)H mm. 100 Ω SMD resistors set is furnished.
	16034G-ABA	None	U.S. – English localization
	16034G-ABJ	None	Japan – Japanese localization
SMD Test Fixture	16034H	None	For Array-type SMD; (0.1 to 5)L x (≤ 15)W x (0.6 to 3)H mm. 100 Ω SMD resistors set and Operation Manual are furnished.
SMD Test Fixture	16044A	None	Kelvin contact test fixture for SMD; (1.6 to 8)L x (0.8 to 8)W x (0.8 to 3)H mm
	16044A-ABA	None	U.S. – English localization
	16044A-ABJ	None	Japan – Japanese localization
Test Fixture	16047A	None	For axial or radial lead device. Operation and Service Manual is furnished.
	16047A-701	None	Adds Shorting plate
Test Fixture	16047D	None	For axial or radial lead device. Operation and Service Manual is furnished.
	16047D-701	None	Adds Shorting plate
Test Fixture	16047E	None	For axial or radial lead device
	16047E-ABA	None	U.S. - English localization
	16047E-ABJ	None	Japan – Japanese localization
Test Leads	16048A	None	BNC connector leads; 0.94 m. BNC connector bracket and Operation and Service Manual are furnished.
Test Leads	16048D	None	BNC connector leads; 1.89 m. BNC connector bracket and Operation and Service Manual are furnished.
Test Leads	16048E	None	BNC connector leads; 3.8 m. BNC connector bracket and Operation and Service Manual are furnished.
Test Leads	16048-60030	None	Equivalent to previous 16048B. BNC – SMC connector leads; 0.94 m
	16033-60001	None	SMC connector bracket for 16048-60030 test leads

Available Accessories – General Measurement Accessories – continued

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Tweezers Test Fixture	16334A	None	For SMD; ≤ 10 mm L. Tweezers type; cable length 1 m. Shorting block and Operation and Service Manual are furnished.
Kelvin Clip Leads	16089A	None	2 large clips. 5 Hz - 100 kHz. Choose mandatory option 16089A-800 or C20. Operation and Service Manual is furnished.
	16089A-800	None	Cable length: 1 m (standard)
	16089A-C20	None	Cable length: 2 m
Kelvin Clip Leads	16089B	None	2 medium clips. 5 Hz - 100 kHz. Choose mandatory option 16089B-800 or C20. Operation and Service Manual is furnished.
	16089B-800	None	Cable length: 1 m (standard)
	16089B-C20	None	Cable length: 2 m
Kelvin IC Clip Leads	16089C	None	2 IC clips. 5 Hz - 100 kHz. Cable length 1 m. Operation and Service Manual is furnished.
Alligator Clip Leads	16089D	None	4 medium clips. 5 Hz - 100 kHz. Cable length 1 m. Operation and Service Manual is furnished.
Kelvin Clip Leads	16089E	None	2 large clips. 5 Hz - 100 kHz. Cable length 1 m. Operation Note is furnished.
External Voltage Bias Fixture	16065A	None	± 200 V dc max., for axial or radial lead device. Shorting plate and Operation and Service Manual are furnished.
4-Terminal to 7 mm Coaxial Adapter	16085B	None	Terminal converter for using RF component test fixture such as the 16092A, 16192A, 16194A, 16196A/B/C/D and 16197A. Operation Note is furnished.
Dielectric Test Fixture	16451B	None	Test fixture for measuring permittivity of dry solid sheet material; Cable length 1 m. 38 mm and 5 mm diameter electrodes for measuring bare material and two types of electrodes for measuring material with pre-formed electrodes are furnished.
	16451B-ABA	None	U.S. – English localization
	16451B-ABJ	None	Japan – Japanese localization

Available Accessories – General Measurement Accessories – continued

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Liquid Test Fixture	16452A	None (16048A or 16452-61601 Test Leads recommended)	Test fixture for measuring permittivity of liquid material. Required volume of material; 3.4, 3.8, 4.8 or 6.8 ml. Temperature range: –20 ° to +125 °C. Shorting plate, spacers, SMA-BNC adapters, fixture stand, carrying case and Operation and Service Manual are furnished.
Test Leads	16452-61601	None	Heat-proof test leads for use with the 16452A. Temperature range: –20 ° to +125 °C
3-Terminal SMD Test Fixture	16043-60011	None	Equivalent to previous 16043A. For related options and accessories, see Note below this table.
3-Terminal SMD Test Fixture	16043-60012	None	Equivalent to previous 16043B. For related options and accessories, see Note below this table.
Balanced/Unbalanced 4-Terminal Converter	16314-60011	None	Equivalent to previous 16314A; Unbalanced 50 Ω to balanced 50 Ω converter for measuring balanced device or circuit. Shorting bar and 50 Ω resistor for Short/Load compensation and Operation and Service Manual are furnished.

Note: For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

Available Accessories – for Calibration and Maintenance

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Open Termination	42090A	None	4-terminal pair Open termination. Needed for performing calibration.
Short Termination	42091A	None	4-terminal pair Short termination. Needed for performing calibration.
4-Terminal Pair Standard Capacitor Set	16380A	None	1 pF, 10 pF, 100 pF and 1000 pF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.
4-Terminal Pair Standard Capacitor Set	16380C	None	0.01 µF, 0.1 µF and 1 µF standard capacitor set with carrying case. Calibration report and Operation Note are furnished.
	16380C-001	None	Adds 10 µF standard capacitor
4-Terminal Pair Standard Resistor Set	42030A	None	9 standard resistors from 1 mΩ to 100 kΩ in decade steps; Carrying case, calibration report and Operation and Service Manual are furnished.

Note: For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

Literature Resouce

Title	Publication Number	Additional Information
E4980A Data Sheet	5989-4435EN	
E4980A Brochure	5989-4235EN	
E4980A Technical Overview: Migrating from an Agilent 4279A to an Agilent E4980A Precision LCR Meter	5989-4433EN	
E4980A Technical Overview: Migrating from an Agilent 4284A to an Agilent E4980A Precision LCR Meter	5989-4434EN	
Application Note 369-8 : Wide Range DC Current Biased Inductance Measurement	5950-2367	The DC current biased measurement configuration is detailed in this Application Note.
LCR Meters, Impedance Analyzers and Test Fixtures Selection Guide	5952-1430E	
Accessories Selection Guide For Impedance Measurements	5965-4792E	
Impedance Measurement Handbook	5950-3000	

Note: More literature is available on the Agilent home website.

Web Resource

Have access to the following websites to acquire the latest news, product and support information, application literature and more.

http://www.agilent.com/find/lcrmeters
http://www.agilent.com/find/e4980a

Agilent Email Updates

www.agilent.com/find/emailupdates
Get the latest information on the products and applications you select.

LXI

www.lxistandard.org
LXI is the LAN-based successor to GPIB, providing faster, more efficient connectivity. Agilent is a founding member of the LXI consortium.

Agilent Channel Partners

www.agilent.com/find/channelpartners
Get the best of both worlds: Agilent's measurement expertise and product breadth, combined with channel partner convenience.

Remove all doubt

Our repair and calibration services will get your equipment back to you, performing like new, when promised. You will get full value out of your Agilent equipment throughout its lifetime. Your equipment will be serviced by Agilent-trained technicians using the latest factory calibration procedures, automated repair diagnostics and genuine parts. You will always have the utmost confidence in your measurements. For information regarding self maintenance of this product, please contact your Agilent office.

Agilent offers a wide range of additional expert test and measurement services for your equipment, including initial start-up assistance, onsite education and training, as well as design, system integration, and project management.

For more information on repair and calibration services, go to:

www.agilent.com/find/removealldoubt

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

www.agilent.com/find/contactus

Americas

Canada	(877) 894-4414
Latin America	305 269 7500
United States	(800) 829-4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Thailand	1 800 226 008

Europe & Middle East

Austria	43 (0) 1 360 277 1571
Belgium	32 (0) 2 404 93 40
Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	49 (0) 7031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
Switzerland	0800 80 53 53
United Kingdom	44 (0) 118 9276201

Other European Countries:
www.agilent.com/find/contactus

Revised: October 1, 2009

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2009
Printed in USA, October 16, 2009
5989-8321EN

Agilent Technologies